Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE
NAME

CENTRE
NUMBER

CANDIDATE
NUMBER

INFORMATION AND COMMUNICATION TECHNOLOGY

0417/01

Paper 1 Theory

For Examination from 2016

SPECIMEN PAPER

2 hours

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces at the top of this page and any additional pages you use.
Write in dark blue or black pen.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

No marks will be awarded for using brand names of software packages or hardware.
Answer **all** questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **13** printed pages and **1** blank page.

1 Several items of data are input to a computer using direct data entry methods. Write down the most appropriate input device to input each item of data.

(a) data written in special ink at the bottom of bank cheques

.... [1]

(b) information on the label of a supermarket product

.... [1]

(c) shaded in boxes on a student's examination answer sheet

.... [1]

(d) debit card details input at an ATM

.... [1]

2 Circle **two** items which are used as output devices.

bar code reader   **joystick**   **laser printer**   **multimedia projector**

PIN pad   **scanner**   **temperature sensor**   **touch pad**

[2]

3 Tick **true** or **false** next to each of these statements.

	true	false
Computer programs are examples of hardware.		
A Command Line Interface is a form of operating system.		
A tablet computer is larger than a desktop computer.		
A compiler is an example of applications software.		

[2]

4 A new computer system storing examination results out of 20 is to be tested using a range of test data. Tick whether each of the marks is an example of **normal** data, **abnormal** data or **extreme** data.

	normal	abnormal	extreme
18			
21			
twenty			
20			

[4]

5 A desktop computer is already used in an office which does **not** have an internet connection.

(a) Name **two** items of hardware which would enable the computer to be connected to a local area network.

1 ....

2 .... [2]

(b) Name **one** item of hardware which would enable the network to be connected to the internet.

.... [1]

(c) Tick whether these statements are **true** or **false**.

	true	false
Booking a theatre ticket is an example of online processing.		
Producing utility bills is an example of online processing.		
An internet browser is used by web designers to test web pages.		
An internet browser uses an inference engine.		

[2]

6   Describe **three** types of medical aid which can be produced using a 3D printer.

1 ....

....

2 ....

....

3 ....

.... [3]

7   **(a)** Explain what is meant by GPS.

....

....

....

....

....

.... [3]

(b) Give **two** examples of the use of GPS.

1 ....

....

2 ....

.... [2]

8   Compare and contrast the use of magnetic tapes with removable magnetic disks to make network server backups.

....

....

....

....

....

....

....

....

.... [5]

9   Johann is going on holiday to a different country. He will need to take his passport. He has a new type of passport which has an RFID chip in it. He will be passing through automated passport control gates.

   (a) Describe what an RFID chip consists of.

   ....

   ....

   ....

   .... [2]

   (b) Describe how RFID will be used as he passes through passport control.

   ....

   ....

   ....

   ....

   .... [3]

10 A holiday company uses spreadsheets to organise the holidays they offer for scuba divers. In the first two columns, there is a list of holiday codes together with the accommodation offered.

Also in the spreadsheet, there are formulae to manipulate the data stored elsewhere in the spreadsheet.

There is also space to calculate the number of weeks and days each type of holiday has been booked for.

	A	B	C	D	E	F	G	H
1	Definition Code	Type			Booked Code		Weeks	Days
2	A	Accommodation only		=VLOOKUP(E2,$A$2:$B$8,2)	BB	=SUMIF($B$12:$B$22,E2,$C$12:$C$22)		
3	BB	Bed and breakfast		=VLOOKUP(E3,$A$2:$B$8,2)	C	=SUMIF($B$12:$B$22,E3,$C$12:$C$22)		
4	C	Caravan		=VLOOKUP(E4,$A$2:$B$8,2)	L	=SUMIF($B$12:$B$22,E4,$C$12:$C$22)		
5	FB	Full board		=VLOOKUP(E5,$A$2:$B$8,2)	FO	=SUMIF($B$12:$B$22,E5,$C$12:$C$22)		
6	FO	Flights only		=VLOOKUP(E6,$A$2:$B$8,2)	HB	=SUMIF($B$12:$B$22,E6,$C$12:$C$22)		
7	HB	Half board		=VLOOKUP(E7,$A$2:$B$8,2)	FB	=SUMIF($B$12:$B$22,E7,$C$12:$C$22)		
8	L	Liveaboard						
9								
10								
11	Name	Type	Number of days					
12	A Sharif	C	7					
13	C Jones	BB	14					
14	C Li	C	10					
15	D Vasquez	FB	7					
16	Da Silva	FO	14					
17	G Wasserburg	HB	10					
18	J Singh	L	14					
19	M Ali	L	7					
20	M Garcia	C	10					
21	N Smith	BB	14					
22	V James	FO	7					
23								

(a) Explain what the formula in cell D2 does. (Do **not** refer to column headings.)

....

....

....

....

....

.... [3]

(b) What type of holiday would you expect to see in D5?

.... [1]

(c) Explain what the formula in cell F2 does. (Do **not** refer to column headings.)

....

....

....

....

....

.... [3]

(d) What value would you expect to see in F5?

.... [1]

(e) What formula would you expect to see in G2?

= .... [2]

(f) What formula would you expect to see in H2?

= .... [2]

(g) Tick **three** appropriate features of spreadsheet software which make it suitable for creating and using computer models.

	✓
what ifs	
queries	
automatic recalculation	
internet browsing	
animation	
data replication	
emails	
changing fonts	

[3]

11 Describe the differences between RAM and ROM.

....

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....

....

....

....

.... [4]

12 Paul employs Jane, a systems analyst, to create a new database system for his supermarket business. He stocks a selection of foods.

Paul needs to know quickly when his stock is low so he can send for more products. He needs to record each product so it is unique. He also needs to know the date that each product was last ordered.

(a) Complete the data dictionary table, giving the field names which would be used in the database and describing the most suitable validation check which could be carried out on each field. Do **not** use spaces in the field name.

Field name	Validation check
	None
Last_ordered_date	

[6]

(b) Name and describe **two** methods of verification.

1 Name ....

Description ....

....

....

2 Name ....

Description ....

....

.... [4]

(c) After the system is developed it will be implemented.
Describe **three** methods by which a new system can be implemented.

1 ....

....

2 ....

....

3 ....

.... [3]

13 Doctors often use expert systems to diagnose illnesses of patients.

(a) Describe how an expert system diagnoses illnesses.

....

....

....

....

....

....

....

.... [4]

(b) Give **two** other uses of expert systems.

1 ....

2 .... [2]

14 A company uses robots to manufacture cars.

Tick **three** advantages for the company of using robots rather than humans to manufacture cars.

	✓
Robots produce the same standard every time.	
Robots don't cost very much to buy.	
Robots don't need programming to perform a task.	
Robots are more accurate.	
Workers are no longer employed.	
Robots don't take breaks.	
Robots can think for themselves.	
Robots never make mistakes.	

[3]

15 A school has a cabled LAN. The head teacher of the school wants to replace it with a WLAN. Explain the differences between a cabled LAN and a WLAN, giving **two** advantages and **two** disadvantages of having a WLAN.

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....

.... [5]

16 (a) Describe the differences between physical safety and e-safety when using computers.

....

....

....

.... [2]

(b) Describe **three** measures which should be taken in order to maintain e-safety.

1 ....

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2 ....

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3 ....

.... [3]

17 There are many microprocessor controlled devices in the modern home. Discuss the effects of these on people's lifestyles.

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.... [6]

18 Multi-national companies often use video-conferencing. Discuss the advantages and disadvantages of holding video-conferences rather than face-to-face meetings.

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.... [8]

14

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